

In The Claims

This listing of claims replaces all prior versions, and listings, of claims in this application.

1. (Currently Amended) A method for driving a diode, comprising:
 - (a) providing a power supply input voltage ~~upto~~ up to about three volts;
 - (b) selecting ~~of~~ an amount of current from at least two amounts of current to flow through a diode; said selecting of said amount of at least two amounts of current based upon a voltage of at least two input values;
 - (e) directing said selected amount of current to flow through said diode; wherein at least two current sources operating to produce said at least two amounts of current are accommodated with a headroom voltage provided by said input voltage to operate correctly without being connected to an alternating current coupling circuit.
2. (Original) The method as claimed in claim 1, wherein said method is capable of driving a vertical cavity surface emitting laser diode.
3. (Original) The method as claimed in claim 1, wherein a first current source of said at least two current sources produces an amount of current substantially equal to one of said at least two amounts of current selected.
4. (Original) The method as claimed in claim 1, wherein said selecting one of said at least two amounts of current is accomplished by a pair of transistors operating as a differential switch.
5. (Currently Amended) A circuit for providing a semiconductor laser drive current, comprising:
 - (a) a power supply input voltage ~~upto~~ up to about three volts;
 - (b) a differential switch for selecting an amount of current from at least two amounts of current depending upon the voltage of each of at least two inputs; said differential switch being formed from a pair of transistors; and
 - (e) at least two current sources, said at least two current sources being capable of producing said at least two amounts of current by at least one of independent and combined operation, wherein a headroom voltage for said at least two current sources is obtained by the amount of voltage provided by said input voltage less a voltage drop across a device being

driven by said selected current and a voltage drop across said pair of transistors during operation of said circuit.

6. (Original) The circuit as claimed in claim 5, wherein said pair of transistors are bipolar transistors.

7. (Original) The circuit as claimed in claim 5, wherein approximately a volt of headroom voltage is obtained by the amount of voltage provided by said input voltage less a voltage drop across said device being driven by said selected current and a voltage drop across said pairs of transistors during operation of said circuit.

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8. (Currently Amended) A circuit, comprising:
(a) at least two inputs;
(b) a first transistor connected to a first input of said at least two inputs;
(c) a second transistor connected to a second input of said at least two inputs;
(d) a first current source capable of generating a first amount of current connected to said first and second transistors; and
(e) a second current source capable of generating a second amount of current connected to said second transistor, wherein a the second amount of current and an amount of current substantially equal to a the second amount of current less a the first amount of current is capable of being delivered to a device.

9. (Currently Amended) The circuit as claimed in claim 8, wherein a the second amount of current is delivered to said device when said first input is a higher voltage than said second input.

10. (Currently Amended) The circuit as claimed in claim 8, wherein said amount of current substantially equal to a the second amount of current less a the first amount of current is delivered to said device when said second input is a higher voltage than said first input.

11. (Original) The circuit as claimed in claim 8, wherein said first and second transistors are bipolar transistors.

12. (Original) The circuit as claimed in claim 8, wherein said first input is connected to a base of said first transistor.

13. (Previously Amended) The circuit as claimed in claim 8, wherein said second input is connected to a base of said second transistor.

14. (Original) The circuit as claimed in claim 8, wherein said first current source is connected to an emitter of each of said first and second transistors.

15. (Original) The circuit as claimed in claim 8, wherein said second current source is connected to a collector of said second transistor.

16. (Previously Amended) The circuit as claimed in claim 8, wherein said device is a vertical cavity surface emitting laser diode.

17. (Previously Amended) The circuit as claimed in claim 8, wherein said circuit is capable of driving said device with a voltage supply of three volts or less without alternative current coupling.

18. (Currently Amended) A circuit for providing a semiconductor laser drive current, comprising:

(a) means for providing a power supply input voltage, said power supply input voltage ~~upto~~ up to about three volts;

(b) means for selecting an amount of current from at least two amounts of current to flow through a diode; said selecting means being capable of analyzing the voltage of each of at least two inputs;

(c) means for generating said at least two amounts of current; and

(d) means for directing said selected amount of current to flow through said diode; wherein said generating means is capable of operating correctly without said circuit being connected with an alternating current coupling circuit.

19. (Previously Added) The method as claimed in claim 4, wherein said pair of transistors are bipolar transistors.

20. (Previously Added) The circuit as claimed in claim 16, wherein said vertical cavity surface emitting laser diode is connected to a collector of said second transistor.
